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(21) Application number: **04113333**(71) Applicant: **FUJITSU LTD**(22) Date of filing: **06.05.92**(72) Inventor: **SUGIYAMA IWAO****(54) SEMICONDUCTOR PHOTODETECTOR AND MANUFACTURE THEREOF****(57) Abstract:**

PURPOSE: To obtain a photodetector excellent in photosensitivity by a method wherein a recess is provided to the prescribed region of a semiconductor substrate, and a surface orientation selection layer formed of laminated zinc- containing compound semiconductor layers and a buffer layer formed of a Cd-containing compound semiconductor layer are provided inside the recess concerned.

CONSTITUTION: A recess 21 is provided to a prescribed region of an Si substrate 3, and a ring-shaped source region 11 of a MOS type switching element is provided around the recess 21. A drain region 12 is provided onto the Si substrate 3 at a point separate from the source region 11 by a prescribed distance, and a gate electrode 14 is provided onto the substrate 3 through the intermediary of an insulating film 13. A surface orientation selection layer 22 composed of ZnTe layers or GaAs layers and ZnTe layers which are laminated and a buffer layer 23 composed of CdTe layers doped with N-type impurities are provided inside the recess 21. An N-type HgCdTe layer 16 and a P-type HgCdTe layer 17 are laminated on the buffer layer 23 to serve as a

photodetecting element 2, and a ring-shaped high density source region 11 is provided around the buffer layer 23 for the formation of a photodetector.

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